

## PRES

## Presidential Event

T. H. Lane, ACS President,  
Program Chair

## OTHER SYMPOSIA OF INTEREST:

Naturally Nano (see CHED, Tue)

Excellence in Graduate Polymer Research (see POLY, Sun, Mon)

The Chemistry of Chocolate (see CHAL, Sun)

## SUNDAY AFTERNOON

Section A

Salt Palace Convention Center  
Ballroom A

**Global Energy Challenges in the 21st Century** Cosponsored by COMSCI<sup>†</sup> and IAC<sup>‡</sup>

F. Walworth and A. Harris, *Organizers*

C. Ribes, *Presiding*

- 1:30** Introductory Remarks.  
**Bruce E. Bursten**, ACS Immediate Past President.
- 1:45** 1. Photocatalytic hydrogen production utilizing solar energy. **C. Li**
- 2:15** 2. Global energy challenges in North America. **P. M. Dehmer**
- 2:45** Intermission.
- 2:55** 3. Biomass conversion and bioenergy. **P. C. Vieira**
- 3:25** Global energy challenges in Europe. **3:55** Panel Discussion.

**The Chemistry of Chocolate** Sponsored by CHAL, Cosponsored by PRES

## SUNDAY EVENING

**Excellence in Graduate Polymer Research** Sponsored by POLY, Cosponsored by PROF, SOCED, YCC, and PRES

## MONDAY MORNING

**Excellence in Graduate Polymer Research** Sponsored by POLY, Cosponsored by PROF, SOCED, YCC, and PRES

## MONDAY AFTERNOON

Section A

Grand America  
Grand Salon

**Leadership: Facing the Challenges of Today and Tomorrow**

C. A. Duane and L. McQuire, *Organizers*

E. C. Bigham, *Presiding*

- 1:30** Introductory Remarks. **Eric C. Bigham**, ACS Board of Directors.
- 1:35** 4. Meeting the challenges: Building skills, and developing leaders. **J. R. Folkman**
- 2:05** 5. Carrying the banner for science education in England. **J. Holman**
- 2:35** 6. Leadership as a competitive advantage. **C. A. Martin**
- 3:05** Intermission.
- 3:15** 7. Transferable leadership. **M. M. Qualls**
- 3:45** 8. Leadership at the forefront of my career. **O. I. Asensio**
- 4:15** Concluding Remarks.  
**Thomas H. Lane**, ACS President.

**Excellence in Graduate Polymer Research** Sponsored by POLY, Cosponsored by PROF, SOCED, YCC, and PRES

‡ Cooperative Cosponsorship

## TUESDAY MORNING

**Naturally Nano** Sponsored by CHED, Cosponsored by PRES<sup>†</sup>, NANO, BIOT<sup>‡</sup>, I&EC, and INOR<sup>‡</sup>

## TUESDAY AFTERNOON

**Naturally Nano** Sponsored by CHED, Cosponsored by PRES<sup>†</sup>, NANO, BIOT<sup>‡</sup>, I&EC, and INOR<sup>‡</sup>

## NANO

## Nanoscience: Challenges For the Future

P. S. Weiss, *Program Chair*

## SUNDAY MORNING

**Anselme Payen Symposium: Wood Components: Molecular Structure, Nanoarchitecture and Source for Functionalized Biomaterials** Sponsored by CELL, Cosponsored by NANO

**Chemical Methods of Nanofabrication** Sponsored by PHYS, Cosponsored by NANO<sup>†</sup>

**Detection and Monitoring of Engineered Nanoparticles in Environmental and Biological Systems** Sponsored by COLL, Cosponsored by ENVR<sup>‡</sup> and NANO

**Frontiers in Imaging Biological Nanostructures** Sponsored by BIOL, Cosponsored by ANYL, COLL, PHYS, POLY, and NANO<sup>†</sup>

**Frontiers in Nanoparticle and Nanoporous Materials Surface Enhanced Raman Spectroscopy** Sponsored by COLL, Cosponsored by NANO

**Geochemistry of Engineered Nanoparticles in the Environment** Sponsored by ENVR, Cosponsored by NANO

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**Integrating Nanoscience into the College and High School Classroom High School Classroom** Sponsored by CHED, Cosponsored by NANO<sup>†</sup>

**Molecular Hydrogen in Nanoporous Materials: Meeting Ground for Theory and Experiment Accurate Calculation of Interactions of Dihydrogen with Nanoporous Materials** Sponsored by PHYS, Cosponsored by NANO

**Nano Meets Neuro: Novel Challenges for Nanoscience in Probing Brain Chemistry** Sponsored by MEDI, Cosponsored by ANYL, BIOL, COLL, and NANO<sup>†</sup>

**Nanostructured Block Copolymer Materials Synthesis** Sponsored by PMSE, Cosponsored by NANO

**Nanotechnology and the Environment: Emphasis on Green Nanotechnology** Sponsored by I&EC, Cosponsored by INOR and NANO

**Polymers and Carbon Nanotubes Tutorial on Carbon Nanotubes** Sponsored by POLY, Cosponsored by COLL, I&EC, PHYS, PMSE, and NANO

**Solvent Free and Almost Solvent Free Nanofluids Nanofluid Syntheses, Properties, and Applications** Sponsored by COLL, Cosponsored by NANO

## SUNDAY AFTERNOON

Section A

Salt Palace Convention Center  
Hall 2

## Keynote Address on Nanoscience

P. S. Weiss, *Organizer*

**5:00** 1. From nature and back again: Giving new life to materials for energy. **A. M. Belcher**

Section B

Salt Palace Convention Center  
260

**Genetically Designed Molecular Materials Peptide Binding, Kinetics and Assembly** Cosponsored by BIOL and MEDI

M. Sarikaya and C. Tamerler, *Organizers*

- 1:00** Introductory Remarks.
- 1:05** 2. Biohesion: Coupling synthetic and biological entities using genetically engineered peptides. **M. Sarikaya**, C. Tamerler
- 1:35** 3. Modeling binding affinity at peptide-surface interfaces: The role of mutations. **T. R. Walsh**, R. Notman, A. A. Skelton, T. Liang, S. M. Tomasio
- 2:05** 4. Mechanisms and dynamics of protein clustering on a solid surface. **P. Mulheran**
- 2:35** 5. Mobility of inorganic binding peptides on solid surfaces. **C. R. So**, H. Meskine, C. Tamerler, P. Mulheran, M. Sarikaya
- 2:55** 6. Chemical dynamics of protein adsorption and desorption on regulated surfaces in aqueous solutions. **N. Saito**, J. Hieda, O. Takai
- 3:25** 7. Biointerfacial aspects of mussel adhesive proteins and their biomimetic analogs. **P. B. Messersmith**

**Anselme Payen Symposium: Wood Components: Molecular Structure, Nanoarchitecture and Source for Functionalized Biomaterials** Sponsored by CELL, Cosponsored by NANO

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**Finding a Common Vocabulary: Nanotechnology in Chemical Publication** Sponsored by CINF, Cosponsored by NOM<sup>‡</sup> and NANO

**Frontiers in Imaging Biological Nanostructures** Sponsored by BIOL, Cosponsored by ANYL, COLL, PHYS, POLY, and NANO<sup>†</sup>

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**Polymers and Carbon Nanotubes Dispersion and Functionalization** Sponsored by POLY, Cosponsored by COLL, I&EC, PHYS, PMSE, and NANO

**Solvent Free and Almost Solvent Free Nanofluids Nanofluids and Materials** Sponsored by COLL, Cosponsored by NANO

## MONDAY MORNING

Section B

Salt Palace Convention Center  
260

**Genetically Designed Molecular Materials Peptide-Based Molecular Erectors for Functional Systems** Cosponsored by BIOL and MEDI

M. Sarikaya and C. Tamerler, *Organizers*

- 8:30** 8. Toward protein based charge transfer processes in electronic devices. **A. Offenhäuser**, **D. Mayer**
- 9:00** 9. Bioreorganization surface with hierarchical structure. **O. Takai**, N. Saito, H. Sato, Y. Miura, K. Kobayashi
- 9:30** 10. Ellipsometry based sensor surfaces for oligonucleotide and oligopeptide probes. **B. Garipcan**, M. O. Caglayan, G. Demirel, B. Olman, B. Celen, O. K. Nazli, **E. Piskin**
- 10:00** 11. Bioferrofluidics for rapid, labor-free and cost-effective detection and diagnostics. **B. Fischer**, A. Kose, M. Gungormus, M. Sarikaya, C. Tamerler, **H. Koser**
- 10:30** 12. Peptide nucleic acids for molecular assembly and electronic functionality. **C. S. Ozkan**
- 11:00** 13. Quartz binding peptides as molecular linkers for co-assembling nanoentities on multifunctional micropatterned substrates. **T. Kacar**, J. Ray, M. Gungormus, E. E. Oren, C. Tamerler, M. Sarikaya
- 11:20** 14. Adsorption of protein on polyelectrolyte brush surface. **A. Higuchi**, H. Tatematsu, T. Fujima, N. Saito, O. Takai
- 11:40** 15. Surface plasmon enhanced fluorescence of bionanoengineered hybrid system. **A. K. Y. Jen**, K. Leong, M. T. Zin, H. Ma, F. Huang, M. Sarikaya

**Advances in Nanotechnology** Sponsored by SOCED, Cosponsored by NANO

**Anselme Payen Symposium: Wood Components: Molecular Structure, Nanoarchitecture and Source for Functionalized Biomaterials** Sponsored by CELL, Cosponsored by NANO

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**Applications in Nanoscience**

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**Processing of Composites** Sponsored by POLY, Cosponsored by COLL, I&EC, PHYS, PMSE, and NANO

**MONDAY AFTERNOON**

Section A

Salt Palace Convention Center  
Hall 2

**The Kavli Foundation ACS Presidential Plenary Symposium on Challenges in Nanoscience**

P. S. Weiss, *Organizer*

4:00 Introductory Remarks.

4:10 **16.** Nanotechnology in adolescence.

**G. M. Whitesides**

4:45 **17.** Nanotechnology in the environment: Safety by design. **V. L. Colvin**

5:20 **18.** Greener nanoscience: A proactive approach to advancing applications and reducing implications of nanotechnology. **J. E. Hutchison**

5:55 **19.** High resolution patterning technology: A view of the future. **C. G. Willson**

6:30 Panel Discussion.

**Anselme Payen Symposium: Wood Components: Molecular Structure, Nanoarchitecture and Source for Functionalized Biomaterials** Sponsored by CELL, Cosponsored by NANO

**Applications in Nanoscience**

**Films and Surfaces** Sponsored by COLL, Cosponsored by POLY, INOR, and NANO

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**Nanoscale Materials in Chemistry: Environmental Applications: In Honor of Professor Klabunde, I&EC Division Fellow** Sponsored by I&EC, Cosponsored by NANO

**Nanoscience: Characterization and Applications**  
**Energy and Magnetism** Sponsored by INOR, Cosponsored by COLL, POLY, and NANO

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**Materials**  
**Thin Films and Templates** Sponsored by PMSE, Cosponsored by NANO

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**Polymers and Carbon Nanotubes**  
**Properties of Composites** Sponsored by POLY, Cosponsored by COLL, I&EC, PHYS, PMSE, and NANO

**Undergraduate Research Poster Session: Nanotechnology** Sponsored by CHED, Cosponsored by SOCED and NANO

**MONDAY EVENING**

**Fundamental Research in Colloid and Surface Chemistry**  
**General Papers** Sponsored by COLL, Cosponsored by NANO

**Fundamental Research in Colloid and Surface Chemistry**  
**Structure and Function of Membranes, Proteins, and Lipids** Sponsored by COLL, Cosponsored by NANO

**Fundamental Research in Colloid and Surface Chemistry**  
**Nanoparticles, Particles and Particle-Based Materials** Sponsored by COLL, Cosponsored by NANO

**Fundamental Research in Colloid and Surface Chemistry**  
**Surfactants and Applications** Sponsored by COLL, Cosponsored by NANO

**Fundamental Research in Colloid and Surface Chemistry**  
**Polymers: Films, Adsorption, and Nanostructures** Sponsored by COLL, Cosponsored by NANO

**TUESDAY MORNING**

Section B

Salt Palace Convention Center  
260

**Genetically Designed Molecular Materials**  
**Peptide-Based Molecular Scaffolds** Sponsored by BIOL and MEDI

M. Sarikaya and C. Tamerler, *Organizers*

8:30 **20.** Novel silk/silica composite biomaterials. A. Mieszawska, C. C. Perry, D. L. Kaplan

9:00 **21.** Novel materials in regenerative medicine: A life science perspective. **C. J. Kirkpatrick**

9:30 **22.** Structural flexibility in amelogenin and control of tooth enamel reconstruction. **J. Moradian-Oldak**, Y. Fan, J. S. Evans

10:00 **23.** Detection of Mycobacterium tuberculosis complex using SPR based oligonucleotide sensors. M. Duman, M. O. Caglayan, G. Demirel, E. Piskin  
10:20 **24.** Collagen and polyester-based scaffolds for tissue engineering. **V. Hasyrcy**, H. Kenar, D. Yuceel, P. Zorlutuna, P. Yiyigör, G. Köse, N. Hasyrcy

10:50 **25.** Cementum-analogs using hydroxyapatite binding peptides: Toward periodontal regeneration. **M. Gungormus**, H. Fong, E. E. Oren, C. Tamerler, M. Somerman, M. Sarikaya

11:10 **26.** Using biomimetic membranes to understand how mycosubtilin exhibits its antifungal properties. **F. Besson**

11:40 **27.** Designing peptide-based coatings for hydroxyapatite. **J. P. Schneider**

**Anselme Payen Symposium: Wood Components: Molecular Structure, Nanoarchitecture and Source for Functionalized Biomaterials** Sponsored by CELL, Cosponsored by NANO

**Atom-at-a-Time Chemistry** Sponsored by NUCL, Cosponsored by NANO

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**Legal Perspectives On A Shrinking World: Intellectual Property, Business and Regulatory Issues in Nanotechnology** Sponsored by CHAL, Cosponsored by SCHB and NANO

**Molecular Rotors and Motors** Sponsored by COLL, Cosponsored by PHYS and NANO<sup>‡</sup>

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**Nanostructured Block Copolymer Materials**  
**Composites and Thermoplastics** Sponsored by PMSE, Cosponsored by NANO

**Nanotechnology and the Environment: Emphasis on Green Nanotechnology**

**Please refrain from using cellular telephones and cameras during technical sessions.**

**Sustainable Synthesis of Nanomaterials**

Sponsored by I&EC, Cosponsored by INOR and NANO

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**Polymers and Carbon Nanotubes Applications** Sponsored by POLY, Cosponsored by COLL, I&EC, PHYS, PMSE, and NANO

**Polymers for Photonics and Optoelectronics**  
**Multidimensional Patterning** Sponsored by POLY, Cosponsored by PMSE and NANO

**TUESDAY AFTERNOON**

Section B

Salt Palace Convention Center  
260

**Genetically Designed Molecular Materials**  
**Nanostructured Biomacromolecules** Sponsored by BIOL and MEDI

M. Sarikaya and C. Tamerler, *Organizers*

1:30 **28.** Combining DNA, peptide, and inorganic materials in programmable molecular assemblies. **T. H. LaBean**, J. D. Carter

2:00 **29.** Toward self-assembling protein nanostructures. **C. R. Wagner**

2:30 **30.** Viruses and their assemblies for tissue engineering applications. **Q. Wang**

3:00 **31.** Peptide decorated nanocrystal hybrids for solid state lighting. **H. V. Demir**

3:30 **32.** In silico design of solid binding peptides as molecular building blocks in technology and medicine. **R. Samudrala**, E. E. Oren, C. Tamerler, M. Sarikaya

4:00 **33.** Modeling of organic-inorganic interface functionalities via hierarchical directed evolution. **K. Sonmez**

4:30 Concluding Remarks.

**Anselme Payen Symposium: Wood Components: Molecular Structure, Nanoarchitecture and Source for Functionalized Biomaterials**  
**Award Lecture** Sponsored by CELL, Cosponsored by NANO

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**Polymerization in Nanostructured and Nanocomposite Systems New Frontiers in Nanotechnology** Sponsored by POLY, Cosponsored by PMSE and NANO

**Polymers for Photonics and Optoelectronics Applications** Sponsored by POLY, Cosponsored by PMSE and NANO

**Small Chemical Businesses and Nanoscience** Sponsored by SCHB, Cosponsored by NANO

## TUESDAY EVENING

**Green Nanoscience** Sponsored by INOR, Cosponsored by COLL, POLY, and NANO

**Nanoscience Synthesis** Sponsored by INOR, Cosponsored by COLL, POLY, and NANO

**Nanostructured Materials for Future Therapy** Sponsored by POLY, Cosponsored by NANO, PMSE, and BTEC

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## WEDNESDAY MORNING

**Applications in Nanoscience Diagnostics and Delivery** Sponsored by COLL, Cosponsored by POLY, INOR, and NANO

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**Polymers for Photonics and Optoelectronics Properties by Design** Sponsored by POLY, Cosponsored by PMSE and NANO

## WEDNESDAY AFTERNOON

**Applications in Nanoscience Particles and Quantum Dots** Sponsored by COLL, Cosponsored by POLY, INOR, and NANO

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**Polymerization in Nanostructured and Nanocomposite Systems Liquid Crystalline and Structured Systems** Sponsored by POLY, Cosponsored by PMSE and NANO

**Polymers for Photonics and Optoelectronics**

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## WEDNESDAY EVENING

**Exposure of Engineered Nanomaterials** Sponsored by ENVR, Cosponsored by NANO

**Geochemistry of Engineered Nanoparticles in the Environment** Sponsored by ENVR, Cosponsored by NANO

**Nanoscience: Characterization and Applications** Sponsored by INOR, Cosponsored by COLL, POLY, and NANO

**Nanotoxicology: Ecotoxicity of Manufactured Nanomaterials** Sponsored by ENVR, Cosponsored by NANO

## THURSDAY MORNING

**Advances in Micro- to Nano-fluidic Separations and Systems Microfluidics** Sponsored by ANYL, Cosponsored by NANO

**Applications in Nanoscience One-Dimensional Materials** Sponsored by COLL, Cosponsored by POLY, INOR, and NANO

**Frontier Applications of Nanotechnology in Engineering Extracellular Matrices** Sponsored by COLL, Cosponsored by ANYL, BIOT, and NANO<sup>‡</sup>

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**Micro- and Nanofibers from Renewable Materials** Sponsored by CELL, Cosponsored by PMSE<sup>‡</sup> and NANO

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**Nanotoxicology: Ecotoxicity of Manufactured Nanomaterials** Sponsored by ENVR, Cosponsored by NANO

## THURSDAY AFTERNOON

**Advances in Micro- to Nano-fluidic Separations and Systems Nanofluidics and Surfaces** Sponsored by ANYL, Cosponsored by NANO

**Applications in Nanoscience Novel Structures** Sponsored by COLL, Cosponsored by POLY, INOR, and NANO

**Frontier Applications of Nanotechnology in Engineering Extracellular Matrices** Sponsored by COLL, Cosponsored by ANYL, BIOT, and NANO<sup>‡</sup>

**Frontiers in Nanoparticle and Nanoporous Materials Nanoparticles in Sensing** Sponsored by COLL, Cosponsored by NANO

**Frontiers in Nanoparticle and Nanoporous Materials Synthesis, Functionalization and Characterization** Sponsored by COLL, Cosponsored by NANO

**Molecular Hydrogen in Nanoporous Materials: Meeting Ground for Theory and Experiment Various Nanostructured Materials** Sponsored by PHYS, Cosponsored by NANO

**Nanostructured Materials for Future Therapy**

**Nanoparticles** Sponsored by POLY, Cosponsored by PMSE, BTEC, and NANO

**Nanotoxicology: Ecotoxicity of Manufactured Nanomaterials** Sponsored by ENVR, Cosponsored by NANO

## AGFD

## Division of Agricultural & Food Chemistry

D. K. Weerasinghe, *Program Chair*

### SOCIAL EVENT:

Chair Reception, 6-8 pm: Tue

### BUSINESS MEETINGS:

AgFd Subdivision- Joint Meeting, 12-1 pm: Sun  
Executive Committee Meeting, 5-8 pm: Sun  
Future Program Meeting, 12:15-1:15 pm: Mon

## SUNDAY MORNING

Section A

Marriott Downtown  
Salon I

**Biopeptides and Specialty Proteins for Health Promotion and Disease Risk Reduction Testing of Efficacy: Animal and Clinical Trials**

H. Ibrahim, H. Kumagai, and E. Li-Chan, *Organizers*

F. Shahidi, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 1. Modulation of mucosal cytokine-mediated signaling pathways by dietary peptides: Impact in health promotion.

Y. Mine

9:00 2. Effects of a novel pea protein hydrolysate on hypertension and chronic kidney disease. R. E. Aluko, H. M. Aukema

9:25 3. Ameliorative effects of dietary chicken peptide in metabolic syndrome. T. Yanagita, K. Koba, K. Nagao, D. Oikawa, K. Nagisa

9:50 Intermission.

10:05 4. Suppressive effect of blood free histidine on obesity. S. Nakajima, H. Iwai, S. Nakamura, S. Kasaoka, K. Ikeda, Y. Amamiya, F. Yamakura, S. Kawai, S. Katamoto

10:30 5. Physiological response to amino acids supplementation in Japanese female university students. M. Takaoka, M. Ohtani, K. Ogasahara

10:55 6. Prophylactic effect of an anti-Helicobacter pylori IgY in human volunteer test. H. Hatta, Y. Yamashita, T. Nakamura, K. Horie

11:20 Concluding Remarks.

## SUNDAY AFTERNOON

Section A

Marriott Downtown  
Salon I

**Biopeptides and Specialty Proteins for Health Promotion and Disease Risk Reduction Discovery and Development**

H. Ibrahim, H. Kumagai, and E. Li-Chan, *Organizers*

F. Shahidi, *Organizer, Presiding*

1:30 Introductory Remarks.

‡ Cooperative Cosponsorship